Gulf of Mexico Harmful Algal Bloom Bulletin

Region: Texas

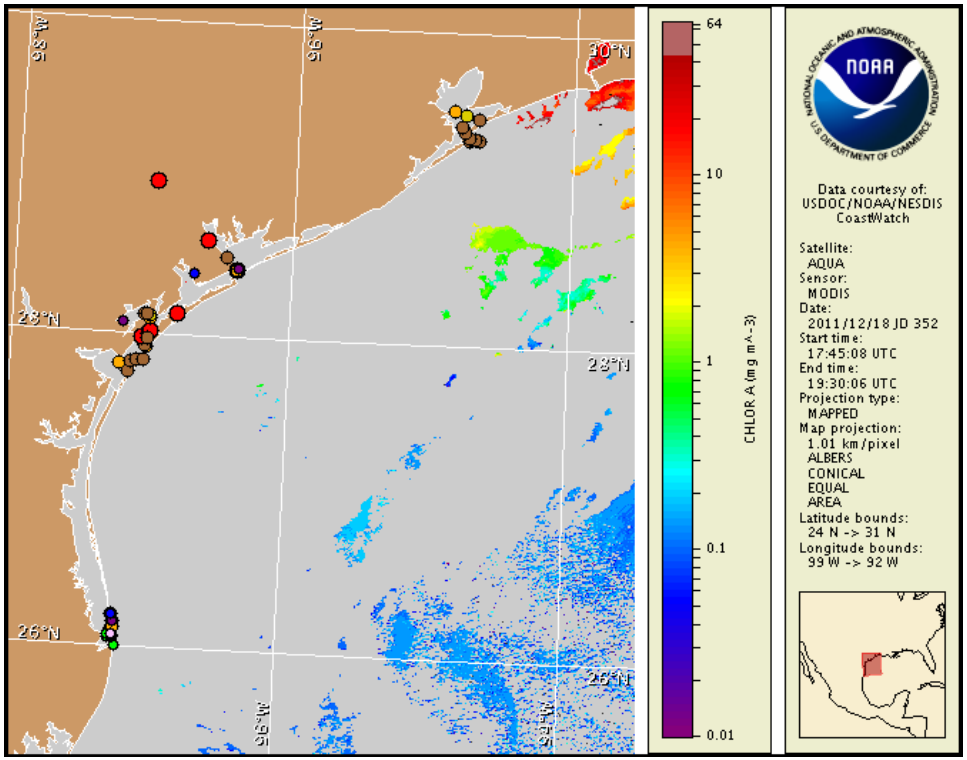
Monday, 19 December 2011

NOAA Ocean Service

NOAA Satellite and Information Service

NOAA National Weather Service

Last bulletin: Thursday, December 15, 2011



Satellite chlorophyll image with possible HAB areas shown by red polygon(s). Cell concentration sampling data from December 9 to 16 shown as red (high), orange (medium), yellow (low b), brown (low a), blue(very low b), purple (very low a), pink (present), and green (not present). For a list of cell count data providers and a key to the cell concentration categories, please see the HAB-OFS bulletin guide:

http://tidesandcurrents.noaa.gov/hab/habfs_bulletin_guide.pdf

To see previous bulletins and forecasts for other Harmful Algal Bloom Bulletin regions, visit the NOAA Harmful Algal Bloom Operational Forecast System bulletin archive: http://tidesandcurrents.noaa.gov/hab/bulletins.html

Conditions Report

A harmful algal bloom is present along the Texas coast in the Galveston/Freeport area, within the Matagorda Bay area, in the Port Aransas/Aransas Bay area and within Corpus Christi Bay, alongshore Padre Island National Seashore and the South Padre Island region, and within the lower Laguna Madre. Patchy high impacts are possible on Monday and Tuesday in the South Padre Island region and within the lower Laguna Madre, and on Monday in the Galveston, Matagorda, and Port Aransas/Corpus Christi Bay areas. Patchy low impacts are possible on Tuesday in the Matagorda and Port Aransas/Corpus Christi Bay areas, and patchy very low impacts are possible in the Galveston Bay area on Tuesday. Water samples last identified harmful algal blooms alongshore the Padre Island National Seashore region on November 28, and within the Brownsville Ship Channel on December 2. Associated respiratory impacts remain possible in these areas. No additional impacts are expected at the coast in Texas today through Tuesday, December 20. Respiratory irritation and dead fish have been reported alongshore South Padre Island, and dead fish and discolored water have been reported from the Lavaca Bay area. All Texas bays and coastal waters remain closed to commercial and recreational oyster harvesting due to blooms of the harmful algae Karenia brevis (red tide).

Analysis

A harmful algal bloom continues along much of the Texas coastline.

Samples collected from the Galveston Bay area on 12/6 and 12/12 identified *Karenia brevis* concentrations ranging from 'not present' to 'medium' (TPWD). Within the Bolivar Roads Pass area (from Galveston Yacht Basin to the end of South Jetty-channel side), *K. brevis* concentrations ranged between 'low a' and 'low b' (12/6, 12/12), with one 'not present' identified from Galveston Yacht Basin on 12/6 (TPWD). Within Galveston Bay, samples indicate 'medium' concentrations at HSC marker #47, with 'low a' concentrations identified from HSC marker #55 nearby (12/12; TPWD). Samples collected within the southern portion of Galveston Bay indicate 'low b' *K. brevis* concentrations at Oyster Lease 414, and 'low a' concentrations at Oyster Lease 301 and HSC marker #'s 25 and 35 (12/6, 12/12; TPWD). In West Bay, one sample collected at the west end of Sportsman's Road indicated 'low b' concentrations on 12/6, while further south, 'low a' and 'medium' *K. brevis* concentrations were identified at the Christmas Bay boat ramp and San Luis Pass Bridge, respectively (12/6; TPWD).

In the Matagorda Bay region, samples indicate that over the past two weeks, *K. brevis* concentrations have fluctuated in the Port O'Connor and Dolphin Point Marina area, with the most recent counts indicating 'not present' to 'very low a' concentrations at the Port O'Connor Little Jetties and 'medium' to 'high' concentrations at the Dolphin Point Marina (12/12-14; TPWD). North of Port O'Connor, 'low a' concentrations were identified on Powderhorn Bayou at the mouth of Powderhorn Lake (12/12), and earlier in the month, 'high' concentrations were identified at the mouth of Keller Bay, north of Matagorda Bay (12/5; TPWD). Samples collected on the western shore of Lavaca Bay over the past two weeks have indicated 'medium' to 'high' concentrations at the Bayfront Peninsula Harbor Ramp (12/12-14; TPWD), Harbor of Refuge, and Lavaca Bay Channel Marker #6 (12/5; TPWD). In the Espiritu Santo/San Antonio Bay region, 'low b' concentrations were identified at South Pass and 'low a' concentrations at Turnstake Reef (12/6; TPWD). Farther north on the eastern shore of San Antonio Bay, 'very low b'

concentrations were identified at Seadrift Harbor (12/12; TPWD). Dead fish and discolored water have been reported at Bayfront Peninsula Harbor on Lavaca Bay (12/19; TPWD).

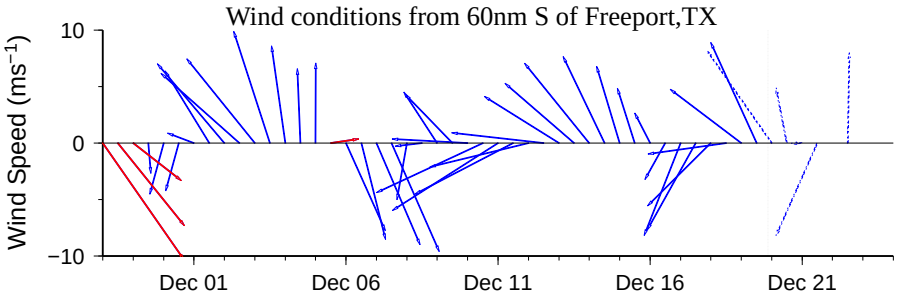
In the Port Aransas region, two samples collected from the Gulf side of Aransas Pass at the UTMSI pier and U.T Pier at the Port Aransas jetties indicate 'very low a' and 'low a' *K. brevis* concentrations, respectively; fifty percent of the cells identified were *K. mikimotoi* (12/14-15; TPWD). Samples collected further within Aransas Pass and Corpus Christi Bay at RDF #16 CC Ship Channel at Island Mooring, Point of Mustang, and Shamrock Cove, also indicate 'low a' concentrations, while a sample collected within COR 22 CC Ship Channel near La Quinta Channel indicates 'medium' concentrations (12/14; TPWD). Several samples collected within and around Aransas Bay last week identified 'very low a' to 'high' *K. brevis* concentrations (12/14-15; TPWD). 'Low a' to 'high' concentrations were identified in central Aransas Bay, offshore Key Allegro, at Cove Harbor, ICWW #49, and at a location south of ICWW #49 (12/14-15; TPWD). Further north, in Mesquite Bay, 'high' concentrations were identified outside Bray Cove (12/15; TPWD), and 'low b' concentrations identified within the ICWW near Sundown Bay (12/6; TPWD). In Copano Bay, 'low a' to 'low b' concentrations were identified at the Copano Bay Causeway, Lap Reef and in the eastern portion of the bay, while 'very low a' concentrations were identified on the west side of the bay (12/15; TPWD).

Along the Padre Island National Seashore, the last samples received indicated 'medium' to 'high' concentrations of *K. brevis* (11/28; TPWD). In the South Padre Island region, samples collected alongshore the Gulf side from Beach Access 6 to the UTPA Coastal Studies Lab indicate 'background' to 'very low b' *K. brevis* concentrations at the coast (12/15-16; TPWD). 'Very low a' concentrations have been identified within Brazos Santiago Pass, where samples earlier last week indicated that *K. brevis* was not present (12/16; TPWD). Samples collected within the lower Laguna Madre at the Isla Blanca boat ramp continue to indicate only 'background' concentrations, while concentrations just north of the boat ramp, at the east end of the Queen Isabella Causeway, range from 'not present' to 'background' (12/15-16; TPWD). On the west side of the lower Laguna Madre, samples collected from the west end of the Queen Isabella Causeway and within Canal C at Long Island Village indicate that *K. brevis* is not present (12/16; TPWD). The most recent sample collected within the Brownsville Ship Channel indicated 'high' concentrations at the San Martin boat ramp (12/2; TPWD). Dead fish have been reported alongshore South Padre Island from Beach Access 6 to the south Mansfield jetty, with the highest numbers from approximately mile 15 to the jetty. Respiratory irritation has also been reported throughout this area (12/19; TPWD).

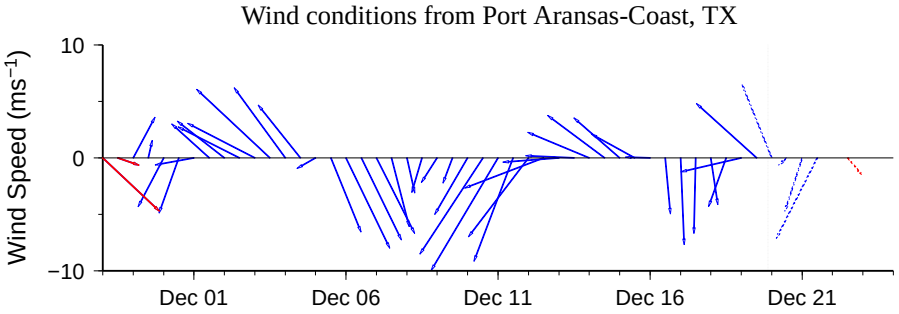
Recent imagery along the Texas coastline is completely obscured by clouds, limiting analysis. In imagery from 12/14 (MODIS; not shown) elevated chlorophyll (2 to 5 μg/L) was visible along much of the Texas coastline from the Galveston area to south of the Rio Grande, with elevated to very high chlorophyll (6 to >20 μg/L) visible along- and offshore from Mustang Island State Park to South Padre Island. Elevated chlorophyll at the coast may contain *K. brevis*, but could also be due to the continued resuspension of benthic chlorophyll and sediments, making it difficult to determine the extent of blooms from satellite imagery alone.

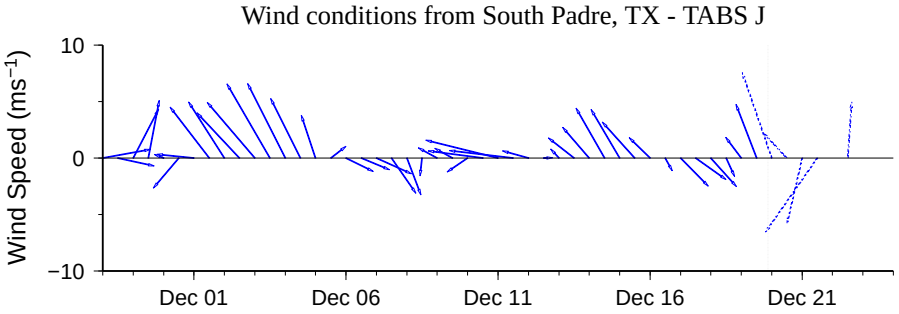
Forecast models based on predicted near-surface currents indicate a maximum bloom transport from coastal sample locations of 30km south from the Galveston Bay region, 80km south from the Matagorda Peninsula region, 65km south from Port Aransas, 30km south along the Padre Island National Seashore region, and 50km south from Brazos Santiago Pass from December 18-22. Onshore winds over the next several days will increase the potential for impacts along the Texas coastline.

Derner, Kavanaugh



Wind speed and direction are averaged over 12 hours from buoy measurements. Length of line indicates speed; angle indicates direction. Red indicates that the wind direction favors upwelling near the coast. Values to the left of the dotted vertical line are measured values; values to the right are forecasts. Wind observation and forecast data provided by NOAA's National Weather Service (NWS).



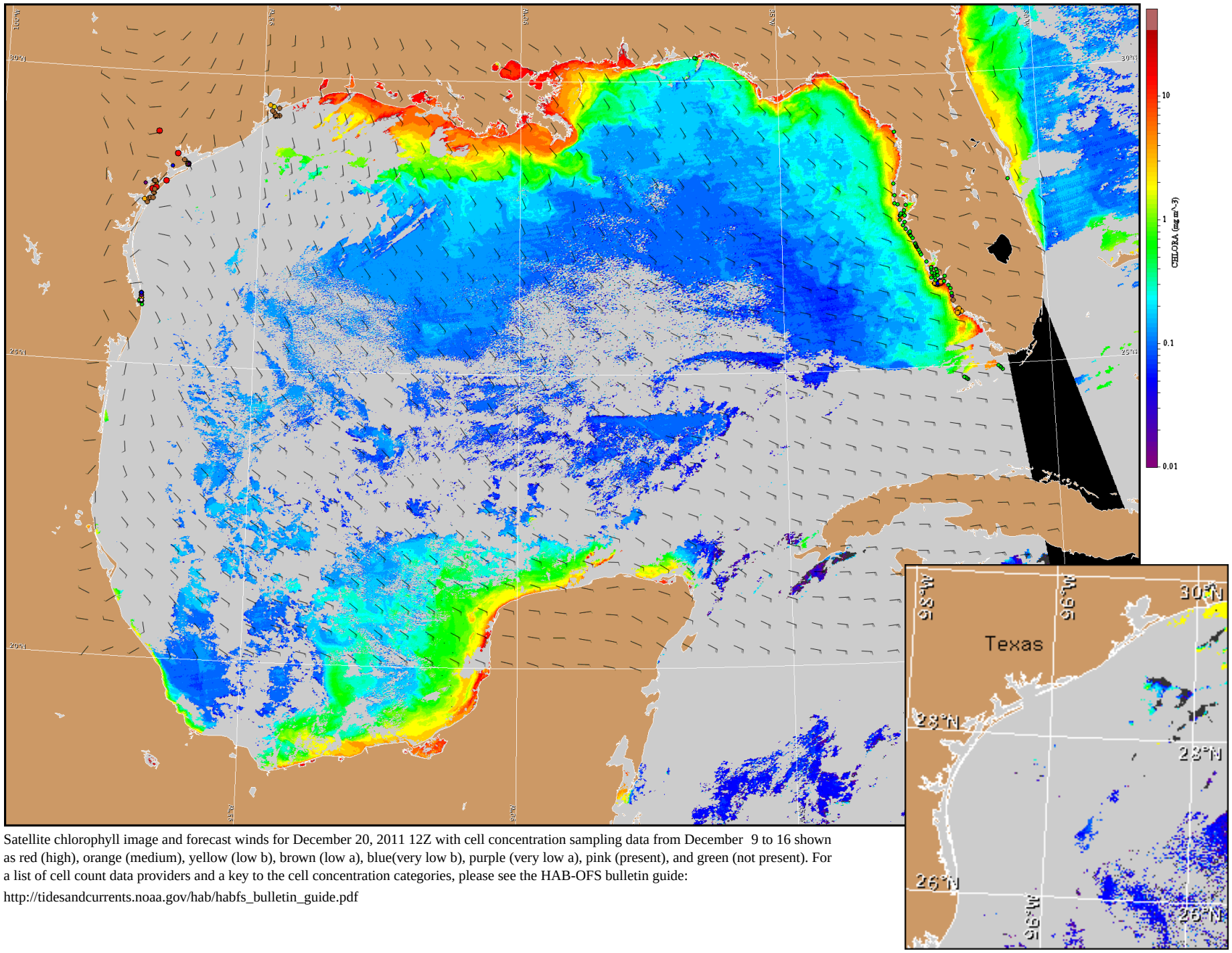


Wind Analysis

Galveston/Freeport: Southeast winds (15-20kn, 8-10m/s) today becoming south after midnight. West winds (10-15kn, 5-8m/s) Tuesday becoming northwest Tuesday afternoon. North winds (10-15kn) Tuesday night.

Port Aransas: Southeast winds (15-25, 8-13m/s) today and tonight becoming southwest (10-15kn) after midnight. Northwest winds (15-20kn) Tuesday becoming north (15-20kn) Tuesday night.

South Padre: Southeast winds (20-25kn, 10-13m/s) today, shifting south (15-25kn) this afternoon through tonight. Northwest winds (10-15kn) Tuesday becoming north (15-20kn) Tuesday afternoon through evening.



Satellite chlorophyll image and forecast winds for December 20, 2011 12Z with cell concentration sampling data from December 9 to 16 shown as red (high), orange (medium), yellow (low b), brown (low a), blue(very low b), purple (very low a), pink (present), and green (not present). For a list of cell count data providers and a key to the cell concentration categories, please see the HAB-OFS bulletin guide:
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Verified and suspected HAB areas shown in red. Other areas of high chlorophyll concentration shown in yellow (see p. 1 analysis for interpretation).